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LABOR

CURRENT DEMOGRAPHIC TRENDS DEMAND BETTER LABOR UTILIZATION

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 9, Sep 80 pp 34-43

[Article by USSR Gosplan Section Deputy Chief Ye. Voronin: "Making Fuller Use of Labor Resources"]

[Text] V. I. Lenin called the worker, the laborer the main productive force of mankind. After all, all successes in economic and social development depend in the end on how effective the labor of people is.

The Communist Party and Soviet government have always devoted great attention to the problems of labor. One of the world's highest levels of employment of the able-bodied population (91 percent) has been attained in the USSR; a powerful material-technical base has been created for production; the required highly skilled personnel are available; the organization of production, labor, and management are undergoing continuous improvement. A great social program is being implemented.

These achievements, combined with well organized political indoctrination and organizational work, create favorable conditions for a continuous increase in labor effectiveness in every association and enterprise, and at every construction site. The experience of many leading collectives shows that wherever labor is well organized, wherever a constant concern is manifested toward working conditions and the housing, cultural, and personal needs of the laborers, there we find minimum losses of working time, minimum nonproductive outlays of the latter, a high level of production and labor discipline, and high labor productivity.

Sensible use of labor resources is acquiring special importance today, at a time when our country is experiencing aggravations in its demographic situation. As result of the consequences of war and the influence of other socioeconomic factors, the birth rate of most union republics decreased in recent years. In 1961-1979 the number of births per 1,000 residents in the country as a whole decreased from 24.9 to 18.2 persons, and the natural increment decreased by more than a factor of two. The RSFSR, the Ukraine, Belorussia, and the Baltic republics are mainly responsible for the drop in birth rate and in the natural increase in

population, while the population of republics in Central Asia, the Transcaucasus, and the Kazakh SSR is experiencing a swift rate of growth. While in the period indicated above the population of republics in Central Asia, the Kazakh SSR, and the Transcaucasus increased by 52 percent, it increased by only 14 percent in the RSFSR, the Ukrainian SSR, the Belorussian SSR, and the Baltic republics.

The country's balance of labor resources will be extremely critical in the next decade. According to the estimates the natural growth in the able-bodied population in 1981-1990 will be much lower than in the present five-year plan. As was noted at the 25th CPSU Congress, young people whose mothers were themselves born during the war will be attaining working age during these years; consequently their numbers will not be high. This will have an unfavorable effect on natural growth in the able-bodied population--the principal source for supporting the country's additional demand for manpower. Simultaneously, men and women who had been born in years of high birthrate will be reaching the maximum working age, and consequently the number of retired individuals will grow. The natural increment in the able-bodied population will remain at a relatively high level in republics of Central Asia, in the Azerbaijan SSR, partially in the Armenian and Georgian SSR, in the Moldavian SSR, in the southern oblasts of the Kazakh SSR, and in a number of southern autonomous republics of the RSFSR. For practical purposes these republics will be responsible for the entire natural increment in the country's labor resources in 1981-1990.

Nor can we forget that in addition to natural growth of the able-bodied population, such sources as able-bodied workers employed as domestics and as private hired hands, able-bodied kolkhoz farmers released from kolkhozes as a result of growth in labor productivity, and retired individuals have played an important role in satisfying the country's additional demand for additional laborers and white collar workers over a period of a number of five-year plans. However, the role of these additional sources has been changing significantly from one five-year plan to the next. Thus in most regions the able-bodied population employed as domestics and as private hired hands is now represented mainly by women with young children and mothers with many children, whose possibilities for entering into social production are extremely limited.

Considering a certain deterioration in the sexual and age composition of the rural public, because we must maintain swift growth in agricultural production, we cannot release significant proportions of the labor resources of the kolkhozes for work in other sectors. Moreover a decrease in the proportion of rural able-bodied people of the best working age in many regions of the country may have an unfavorable effect on the use of agricultural equipment, and it may lead to greater production losses and to excessive redistribution of manpower from the cities.

The possibilities for utilizing retired individuals in national economic sectors are also relatively limited, inasmuch as the reduced physical capability for work and, in many cases, the low level of general education

of the elderly prevent broad utilization of their labor in many jobs in industry, construction, transportation, and other sectors of material production. At the same time, as practice has shown, the employment level of retired individuals is significantly higher in those union republics and regions of the country in which much attention is devoted to this problem. As an example in the Baltic republics, where the number of persons retired due to age is especially large, the enterprises and organizations are creating all of the conditions to hold on to workers attaining retirement age, finding the appropriate jobs for them.

Under such conditions it is extremely important to utilize the labor of women with young children as well as of pensioners and invalids, affording them the possibility of working part-time and at home. However, these forms of employment have not enjoyed their necessary development. Executives of many enterprises that are apparently not yet feeling an acute shortage of manpower are showing a reluctance to establish a short work day, and they are failing to reveal the jobs and sections in relation to which such a schedule would be acceptable and effective. Local labor organs have not yet organized an effort to reveal the actual contingents of the nonworking population that could be extensively employed in production on the basis of an incomplete work day or work at home.

Greater recruitment of retired individuals for social production could be promoted by a sector-wide list of occupations and jobs spelling out where the labor of these people could be used most suitably and effectively. The USSR State Committee for Labor and Social Problems, the USSR Ministry of Public Health, and the AUCCTU must obviously prepare such a list, so that republic and local labor organs could initiate a daily, purposeful effort, together with the ministries, enterprises, and organizations, to attract able-bodied pensioners to accept jobs within their means.

It is obvious from the above that young people attaining working age are becoming the main source for satisfying the national economy's demand for manpower. However, it would be wrong to suggest that the manpower shortage already observed in large cities and industrial centers can be explained only by inadequate growth of labor resources. This circumstance only aggravates the problem, and it is not responsible for it. It would be more correct to blame the shortage on economic causes such as, in particular, weak consideration of the use of the labor force at the present stage in the practice of management and control, and the uniqueness of the ways labor resources are formed and mobilized in different areas of the country.

Considering the dramatic increase in the dependence of the country's economic development on the availability of labor resources, problems associated with reducing personnel turnover in production and making more economical and effective use of labor at every enterprise and construction site acquire special urgency, and they must be solved in accordance with a plan, by implementing a complex of technical, economic, organizational, and social measures. In this case when we draw up current and long-range

plans, it is important for us to take fuller account of not only the economic but also the social effectiveness of these plans' sections, having in mind creation of the necessary conditions for achieving a balance between development of production and services on one hand and the availability of labor resources on the other, both in the country as a whole and on a territorial cross section.

The main thing to do in these conditions is to intensify social production in every possible way, and hasten growth of labor productivity in all sectors of the national economy. L. I. Brezhnev noted in his report to the June (1980) Plenum of the CPSU Central Committee: "We have taken on a major task--raising production effectiveness and work quality. It must remain constantly within our field of vision. We must also think about how to accelerate scientific-technical progress, strengthen labor and state discipline, and insure certain growth in labor productivity."* There is a complex task we must complete: We must not only provide for the entire increment in production and expand the job market through growth in labor productivity in all sectors of material production, but we must also simultaneously release manpower from existing enterprises and organizations to develop the services and to provide personnel to new enterprises.

In order that we could complete this task successfully, the ministries, departments, enterprises, and organizations will have to devote daily attention to economical and effective use of the labor of the workers, channeling their efforts mainly at accelerating mechanization and automation of production processes, reducing manual labor, improving the organization of labor and production, reinforcing labor discipline, and creating stable labor collectives. Production associations and enterprises that are solving these problems successfully are as a rule meeting and surpassing their labor productivity growth targets and achieving their entire increase in production (in work volume) with the same or a lower number of workers.

However, many ministries are not devoting adequate attention to creating the necessary conditions for highly productive labor, attempting to increase production volume mainly through new construction and increases in the number of workers. This is contrary to the party's general line of raising production effectiveness and work quality, it is making it difficult to provide manpower to enterprises and organizations that really need it, and it is hindering completion of long-range and current plans.

The machine building ministries face considerable tasks. They must dramatically increase production of equipment and mechanisms to significantly raise the level of mechanization and automation of production processes. In this case special attention should be devoted to producing machines and mechanisms for transportation, freight handling, warehousing, maintenance, and other auxiliary operations. After all, it is precisely in these areas that the manual labor outlays are the greatest. According to the last census of workers in individual occupations, conducted by the USSR State Statistical Administration, as of 15 May 1975 there were about 1.9 million truck drivers, auxiliary workers, carriers, transportation

* PRAVDA, 24 June 1980.

workers, scaffolders, and riggers in the industrial sectors. In this case while the proportion of workers in these occupations decreased by 0.7 percent in 10 years, their absolute number increased by 230,000.

It should also be kept in mind that it would be suitable to solve the problem of accelerating growth in labor effectiveness by a differentiated approach, on the basis of individual sectors and forms of activity. The growth rate should be highest wherever the proportion of manual, heavy, and unattractive types of jobs is greatest and the working conditions are the least favorable. We must not forget that there is tremendous social significance to reequipping the enterprises and reducing the outlays of manual labor. After all, increasingly larger numbers of young people as a rule having a high level of education and imposing correspondingly greater demands on the content and conditions of their labor are going to work in the national economy with every year. And it will be increasingly more difficult to provide the necessary personnel to those areas of production from which heavy and unattractive forms of work have not been eliminated; it would be all the more difficult to create stable labor collectives there.

There is still much to do in terms of improving the organization of production and labor, reducing losses of working time, and reinforcing labor discipline. According to the estimates the losses and unproductive outlays of working time at some enterprises attain 15 percent and higher. Personnel turnover is large as well. In a situation where the national economy's fixed productive capital has risen significantly, to exceed 1 trillion rubles, the loss of every minute of working time causes significant harm to the country's economy, measured in the millions of rubles of unfinished production. Moreover, nonrhythmical work at the enterprises and forced idleness of workers are causing higher personnel turnover and making it difficult to provide such enterprises with the manpower they need. Elimination of these negative phenomena should be promoted by measures foreseen by the decree adopted in December 1979 by the CPSU Central Committee, the USSR Council of Ministers, and the AUCCTU, "On Further Reinforcement of Labor Discipline and Reduction of Personnel Turnover in the National Economy."

Continuous improvement of labor organization without the need for sizable capital outlays is resulting in a significant increase in labor productivity, it is raising the interest people display toward their labor, and it is creating favorable working conditions for them. Special attention should be devoted today to introducing collective forms of labor organization, ones promoting greater combination of occupations, expansion of the zones of service, enlargement of the amount of work done by fewer numbers of laborers, and reduction of manpower and equipment idleness.

The USSR State Committee for Labor and Social Problems and the ministries and departments are to take a step toward a qualitatively new stage in improving labor organization within the next few years. We must actively shift from developing and implementing measures associated with individual directions of scientific organization of labor in application to particular

jobs, to integrated and systematic improvement of labor organization at the enterprises and broad introduction of standard labor organization schemes, not only at individual workplaces but also into teams, sections, shops, and enterprises as a whole. This will make it possible to integrally resolve the issues of improving labor organization in relation to workers of all categories.

A complex of measures aimed at achieving more-sensible and economical use of manpower must be developed and implemented not only in the productive sectors but also in the nonproductive sphere. The inevitability of growth in the number of employees in these sectors is inseparably associated with population growth and, consequently, with a need for developing public health, education, housing and communal services, and other sociocultural sectors and services. Computations made by the Scientific Research Institute of Economics of the USSR Gosplan show that if we are to maintain the actually attained norms of services in the leading sectors of the non-productive sphere, practically the entire expected increment in the country's able-bodied population in 1981-1990 will have to be employed by these sectors.

Adequate attention has not been devoted to improving the use of manpower in the services sphere. The proportion of employees in nonproductive sectors has increased at a swift rate. While in 1950 they made up 13.8 percent of all workers, in 1979 their proportion was 25.8 percent. At the same time there are grounds for believing that the need experienced by nonproductive sectors for additional personnel could be made significantly lower if the ministries and departments display greater concern for mechanizing the labor of workers in these sectors and making it more efficient. Labor standards must also be improved in trade, public food services, personal services, cultural services, and state administrative organs. Growth in the number of workers in administration, science, and scientific services, of drivers, and of technical personnel maintaining passenger cars used by various services, observed in recent years, can hardly be justified.

Special attention is required by the territorial aspect of employment. As an example all additional sources of labor resources have already been exhausted in the country's central regions. Nevertheless intensive industrial construction is continuing here, which, considering the manpower shortage, is leading to greater personnel turnover and deterioration of labor discipline.

Capital investments made in the central regions must be directed exclusively at reequipping and reconstructing existing enterprises. Manpower can be provided to new construction projects in this area only through its sector-wide and territorial redistribution, and through a corresponding reduction in the number of laborers employed by the presently existing enterprises. Of course this does not pertain to public health, education, and to housing and municipal services, though much can be done to achieve economical use of personnel in these sectors as well.

Economic and sociocultural development of the central regions may be balanced against the available labor resources if the number of employees in the social economy is gradually stabilized, rather than being reduced. An increase in industrial production at existing enterprises must be accompanied by a reduction in the number of employees. This is a decisive factor to redistribution of part of the labor resources to the country's eastern regions and the RSFSR's nonchernozem zone, and to providing personnel to the services. Attainment of a balance between economic development in the central regions and the availability of labor resources would also require a decrease in the number of production operations processing scarce raw materials and using imported agricultural products, especially those from republics enjoying a labor surplus.

Redistribution of manpower between national economic sectors and between regions of the country acquires special importance in this connection. However, there are still many difficulties and shortcomings in this area. First of all we do not have a system for predicting the numbers of laborers and office workers that are to be released for other jobs, and their breakdown in terms of occupations and qualifications. The ministries far from always take timely steps to utilize released workers. They raise these issues before the labor organs only after there is little time left to create new production operations in the appropriate regions, and they fail to prepare the necessary conditions for settling new arrivals.

From my point of view we should make the USSR ministries and departments responsible for developing and implementing, jointly with the USSR State Committee for Labor and Social Problems on an annual basis, measures to release and utilize personnel. Thought should also be given to how to achieve their intersector and territorial redistribution in correspondence with the interests of the state and with the fullest possible consideration of the interests of every individual. One thing is sure: Correct solution of this problem will result in better use of the manpower reserves at the enterprises, and greater labor effectiveness.

Discussing the location of productive forces, we should dwell on the republics of Central Asia and the Transcaucasus, where in both the current five-year plan and especially in the future the rate of growth of the able-bodied public will continue to be high, and the number of persons employed as domestics and as private hired hands will remain significant. This can be explained by the fact that new construction always accounts for the unique features of the indigenous nationalities in these areas. We know how many enterprises of machine building, machining, metallurgical, chemical, and other sectors have been built in these republics in recent years. However, their productive capacities are being assimilated too slowly, and in many cases these enterprises continue to be manned by people moving from labor-poor regions of the country. Obviously, when planning construction of new enterprises in republics of Central Asia and the Transcaucasus, we must take fuller account of the low mobility of the local population and its predisposition for agricultural production. Production

operations associated with procurement and processing of minerals and agricultural products should be developed at an accelerated pace, bringing them as close as possible to the sources of the raw materials and manpower. Socioeconomic growth in these republics should actively promote further change in the way of life, and creation of the conditions for territorial redistribution of labor resources in the interests of developing production in both these and other regions of the country.

It is important to significantly increase the training of the local public in skilled occupations. This would require the training of skilled workers at a significantly greater rate than in the country as a whole, which can be done by expanding the network of vocational-technical educational institutions quickly and training skilled personnel in other union republics.

Special emphasis should be placed on the latter. The high rate of growth of the numbers of young people in republics of Central Asia and the Transcaucasus and the poor possibilities afforded for their occupational training prevent us from fully satisfying the demand exhibited by enterprises and organizations of these republics for local skilled workers. As an example, while about 24 percent of all young men and women graduating from eighth and tenth grades at schools of general education entered vocational-technical schools in 1979, the corresponding percentages were 19 for the Azerbaijan SSR, 15 for the Uzbek SSR, 11 for the Turkmen SSR, and only 9 percent for the Tajik SSR. In this case the eighth and ninth grades of general schools in the RSFSR contain about 59 percent of all students; compare this with 79 percent in the Tajik and Turkmen SSR, 73 percent in the Uzbek SSR, and 67 percent in the Azerbaijan SSR.

At the same time the enrollment of many vocational-technical training institutions, especially those specializing in construction and located in central regions, particularly the RSFSR's nonchernozem zone, remains about 15 percent short throughout the entire year. Concurrently construction ministries such as the USSR Ministry of Construction, the USSR Ministry of Rural Construction, and the USSR Ministry of Land Reclamation and Water Resources and the USSR Ministry of Light Industry are forced to send skilled workers to construction sites and enterprises located in the republics of Central Asia and the Transcaucasus from other labor-poor regions of the country. The need arises in this connection for not only increasing the rate of construction of vocational-technical educational institutions in these regions, but also sending some young men and women from Central Asia and the Transcaucasus, particularly from the Azerbaijan SSR to schools in the Russian Federation for their vocational training; following their graduation from these schools, the young skilled workers would be hired by enterprises and construction projects of these republics. This measure would attract more young people to socially useful labor, and help develop highly skilled national laborers.

The practice of locating new construction in small and medium-sized cities requires improvement as well. The fact that large enterprises already

exist in such cities and contiguous regions and that unemployed labor resources are limited is far from always considered. Thus the capital investments necessary to develop the infrastructure with the purpose of attracting and securing personnel are not made. Nor is thought given to the fact that small cities located within the zone of influence of large cities gravitate toward the latter, and that it would be more advantageous to locate within them small, specialized enterprises, as well as branches and shops of existing production associations and enterprises located in large cities. And on the other hand it would be more suitable to locate enterprises involved in agricultural raw material processing in small cities located in rural areas.

Therefore the plans of economic and social development of every kray, oblast, autonomous oblast, and autonomous district must include programs for integrated development of small and medium-sized cities, ones foreseeing grounded choice of the places of construction of the enterprises, their profiles, and their distribution with a consideration for the economic specialization of the given region and the unique features associated with recruiting the local public for social production.

Special attention must be devoted to attracting and securing manpower for regions of Siberia, the Far East, and the eastern part of the Kazakh SSR. At the moment high wages are the main thing to which the attractiveness of these regions for workers is limited. But this is not enough to insure accelerated settlement of vast territories; this explains the significant outflow of people into the country's central and southern region, the difficulties in creating stable labor collectives, and the long time required to assimilate the planned capacities of new enterprises.

It should be kept in mind that the balance between economic development and labor resources in newly developed regions depends in many ways on how well we solve the employment problem in the country's central regions, in Central Asia, and in the Transcaucasus, inasmuch as these problems are closely associated with population migrations. Therefore in addition to creating advantages in comparison with other regions of the country in terms of wages and other privileges, as well as significantly raising the standard of living, elimination of the manpower shortage in central regions and preparation of the local public for skilled jobs in industrial sectors of the Central Asian and Transcaucasian republics are important prerequisites for reducing personnel turnover in Siberia and the Far East.

The level of equipment availability at newly commissioned enterprises has no less significance to securing personnel and insuring the stability of labor collectives in eastern regions. The technical-organizational level of production in these regions must be such that the manpower requirement could be minimized.

Nor should we fail to note the need for normalizing the regional wage coefficients. As we know, regional coefficients are differentiated in the

same prerequisites depending on the sector in which the workers are employed, while sector differences in wages are regulated by the pay scales and official salaries with a consideration for working conditions and the significance of the sector. Regional coefficients have the purpose of compensating for poorer natural and climatic conditions and for differences in the outlays by the public for acquisition of food, other commodities, and services. Therefore they must obviously be the same for all workers in a given territory, irrespective of the sphere of application of their labor.

It would also be wrong to think that it would be possible to improve the use of labor resources in all of the country's regions without first improving planning in this area, and accumulating and developing the statistical information. Development of the balances of labor resources in the union republics, krais, and oblasts is still often reduced mainly to drawing up tables, without making the necessary analysis of the attained employment level or the structure of the workers in relation to sectors and forms of activity. The numbers of able-bodied workers employed as domestics and as private hired hands continues to be the criterion for evaluating the use of labor resources. However, this indicator far from fully defines the status of labor resources in a given region. Nor does it reveal the composition of the unemployed public in terms of sex, age, or education, and it fails to describe the mobility of the population, which under certain conditions may have an effect on the proportion that can be introduced into social production.

The decree "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality," adopted 12 July 1979 by the CPSU Central Committee and the USSR Council of Ministers, makes the councils of ministers of the union and autonomous republics and the executive committees of kray, oblast, and city soviets of peoples' deputies responsible for drawing up the long-range and annual labor resource balances. The USSR State Committee of Labor and Social Problems is obligated to furnish, to the USSR Gosplan, proposals and estimates of labor resource balances on a territorial cross section, and to implement measures aimed at organizing the distribution of labor resources and improving the supply of personnel to enterprises and organizations.

Such proposals and estimates include: establishment of the possible numbers of able-bodied persons employed as domestics and private hired hands who may be introduced into social production; determination of the contingents of manpower to be subjected to territorial redistribution and resettlement: men, in national economic sectors, for young people graduating from schools of general education; establishment of the possible numbers of persons beyond working age that may be introduced into social production. Working jointly with administrative organs, the labor organs must do everything they can to broaden the practice of incomplete work days, incomplete work weeks, and work at home after analyzing the demand of associations, enterprises, and organizations for manpower and the desire

expressed by the following categories of the public to work in social production (women working as domestics and as private hired hands; persons beyond working age; students).

Beginning in 1982 the USSR Gosplan, the USSR State Committee for Labor and Social Problems, and the USSR Central Statistical Administration have established an order according to which associations, enterprises, and organizations are obligated to tentatively coordinate with the appropriate local city, oblast, kray, and republican planning organs and labor organs on their data for growth in the number of laborers and white collar workers during the planning period, and determine the possible sources for satisfying this growth in manpower, irrespective of their departmental subordination, and at time foreseen for them by the ministries and departments. Special attention must be devoted to staffing enterprises and associations going into operation for the first time, and to quick assimilation of their planned output capacities. The ministries and departments have been ordered to supply manpower to subordinated associations, enterprises, and organizations, mainly through intrasector redistribution, timely training in subordinated training institutions and at the enterprises themselves, and through utilization of local labor resources, on agreement with the appropriate planning and labor organs.

The USSR State Statistical Administration has decided that statistical organs at all levels must provide support in the writing of the final labor resource balance and its submission to the appropriate organs. In this case the final labor resource balance for the individual union republic will be submitted, beginning with the 1980 balance, to the planning committees and the labor committees of the union republics in May--that is, in enough time to permit the union republic to draw up its planned balance. Considering the special complexity of drawing up labor resource balances for individual cities (they require a number of economic computations and statistical surveys--as an example laborers and white collar workers of each city must be accounted for in terms of their place of employment and place of residence, and so on), beginning with the 1981 balance the corresponding computations are to be made only in relation to the capitals of the union and autonomous republics, and kray and oblast centers.

Development of final and planning balances of labor resources in relation to sex, for both the country as a whole and especially the union republics, economic regions, and oblasts, has important significance. Such balances provide an important contribution to the use of male and female labor, of their employment growth, and of the numbers of persons undergoing training with leave from production. Moreover a sex-based balance would permit us to draw up measures for integrated development of individual regions with an eye to making fuller use of the labor of men and women. For the moment, however, sex-based balances are not being compiled due to the absence of the necessary statistics. It should also be kept in mind that sex-based labor resource balances can be written up only on the

condition that final balances are drawn up every year for the individual union republics, economic regions, and oblasts, something that the USSR State Statistical Administration is not doing.

At the same time we must not exaggerate the possibilities of labor resource balances. While such balances are extremely important to large territories, for example the country as a whole, a union republic, an economic region, a kray, or an oblast, inasmuch as they permit us to study and predict the employment dynamics, they cannot serve as a tool for sensible use of labor resources in individual cities or regions, especially small ones. This is understandable. The smaller the territory, the more important it is to know the real demand for laborers and the sources used to fill this demand. In such a case a labor resource balance cannot provide exhaustive answers. What we would need to do here is develop balanced estimates of manpower demand. This is why the Gosplans of the union republics and the labor organs must demand that ministries and departments promptly furnish the balance estimates in order to insure satisfaction of the manpower demand experienced by subordinated associations, enterprises, and organizations located within a given territory.

Fundamental improvement of the use of labor resources would be impossible without improving current statistical reporting. Information on the use of labor resources possessed by statistical agencies is far from adequate. Many necessary data are absent. In addition to improving current reporting, the USSR State Statistical Administration should conduct selective sociological surveys more broadly and systematically, at least once every 3 years, in order to determine the size and composition of manpower reserves in individual regions of the country, and to reveal the conditions governing the public's demand for work, the causes of migration, and the composition of the migrating population.

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EFFECT OF THE STIMULATING ROLE OF WAGES

Zhurnal PLANOVVOYE KHOZYAYSTVO in Russian No. 8, Aug. 80 pp. 110-113

[Article by D. Dymantman, candidate of economic sciences: "The Effect of the Stimulating Role of Wages": a discussion]

[Text] Among the measures adopted by the party and the government to increase the efficiency and quality of work, an important role belongs to questions of improving wages and the stimulation of labor.

The status of wage organization at an enterprise depends to a great extent on the formulation of the state regulation of wages and the enterprise's utilization of possibilities for their differentiation.

Further improvement in the state regulation of wages is connected with conditions for increasing wages in the periods between reviews of wage rates and salaries. This problem is being discussed by scientists and practical workers but, unfortunately, has not been solved.

In accordance with the practice which has evolved, wage rates are reviewed once every 10-15 years. This procedure has a number of substantial shortcomings. A prolonged period between reviews leads to a loss of the independent stimulating significance of such elements of wage organization as norm setting for labor, wage forms and systems, and so forth. In this case, these elements begin to play a role which is unnatural to them in wage regulation, ensuring not as much an increase in the stimulating role of wages for labor as their mechanical growth as a result of distortion of the principles of norm setting, excessive bonuses, and the unsubstantiated employment of piece-work wages.

As practice shows, an average annual growth in wages of 1.5-3 percent leads to a situation where the revision of norms in 10 years increases by 20-40 percent. Thus, for industry as a whole the mean percentage of accomplishment of norms by the moment of changeover to the new wage conditions in 1972 increased to 136 percent as opposed to 125 percent in 1966, that is, by 11 points in 5 years. For individual ministries, this increase was 15-20 percent.

but even after the introduction of increased rates (the rational) the danger of validity of the labor norms is reduced as the wage system becomes older. For example, for the Ministry of Machine Building for Light and Food Industry and Household Appliances (Minlegizboshak) the level of overaccomplishment of the norms increased from the record of 12% to 12.6 in 1979.

A further increase in the stimulating role of wages should be based on the constant improvement of the wage system. In this regard, in our opinion the review of wage rates (salaries) should be accomplished every five years, and the newly established levels and relationships of rates (salaries) must be oriented on the mean wage level. Only in this case will the validity of the labor norms be ensured and their mobilizing influence on the growth in labor productivity be preserved.

A second problem also arises in connection with the question being examined concerning the forms and methods for the annual increase in wages for various categories of workers as the labor productivity at the enterprise increases. At present, in the periods between reviews of wage rates a large portion of the increase in wages is directed toward increasing the wages of piece-workers through the overaccomplishment of the per-worker output norms. At the same time, the increase in the wages of the workers whose wages are based on a time rate as well as of the ITN (technicians for the supervision of production processes) and employees is insignificant and is accomplished, for the most part, through the artificial inflation of wage grades, the unjustified establishment of maximum permissible bonuses and excess staff, and so forth.

In directing the main part of the increase in the wage fund for labor toward increasing the earnings of the piece-workers (and their proportion in the total worker strength in industry is about 40 percent), we weaken the material interest, labor activity, and initiative of the ITN and the time-rate workers.

An increase in wages steps forth as an important stimulus for improving the results of the labor of the entire collective and of each worker. This assumes that an increase in wages caused by a growth in volumes of production and labor productivity must apply to all production sectors which exert an influence on increasing the effectiveness and quality of work. Unquestionably, the workers who are time-paid and who make the corresponding contribution to the development of production should be stimulated to the same degree as the piece-worker.

The solution of these problems can proceed in two directions. First, the growth in wages should be coordinated with a decrease in the intensity of labor norms in the periods between reviews of the wage rate system and with the purposeful and substantiated increase in the maximum permissible size of bonuses or special supplementary payments to the wage rates (salaries) of all categories of personnel. The size of the bonuses for workers can be differentiated and the planned rise in labor productivity within the limits of the

five year plan, that is, during the period when constant wage rates are in effect, can be increased moderately. With the next increase in wage rates the maximum permissible size of the bonuses must be established at the level of the initial one. There are no grounds to consider that the size of the bonus can attain a significant proportion in the wage structure. An increase in the maximum permissible sizes of the bonuses applies first of all to highly qualified specialists of the enterprise's leading services who are presently receiving the maximum amounts of bonuses established by legislation. Naturally, the establishment of increased bonus amounts requires the working out of new statutes which cause the interest of all groups and categories of personnel in the growth in the mean wage on the basis of raising labor productivity.

The second direction is a change in the procedure for the formation and expenditure of labor wage funds. If the mean wage of the workers is increased in large measure through an increase in the wage fund, the earnings of the ITP and employees is only increased through an increase in the economic incentive fund.

Reformulations in the state regulation of wages lead to a situation where the wage level for the workers and ITP converge groundlessly. If in 1965 in industry the ITP wage was 195 percent in comparison with the earnings of the workers, in 1973 (by the start of introduction of new wage conditions) it was 137 percent. But the ratios established by the new wage rate system are also destroyed, in which regard obviously not in favor of the specialists. Thus, in 1975 the wages of the ITP in relation to the wages of the workers was now 124 percent, and in 1978--120 percent. This ratio does not reflect the real differences in the nature of the labor of workers and ITP which accomplish the development and improvement of production.

Various suggestions for improving the regulation of wages of various personnel categories are being put forth. Thus, it is recommended that a large part of the increase in the economic incentive fund be directed toward stimulating the ITP and white collar workers. It seems to us that this solution of the problem will not be able to ensure in full measure the equality of interests of workers and white collar workers.

One could proceed in a different way--to solve the problem of creating a single source for the payment of bonuses for the further strengthening of individual and collective material interest and realization of proposals for the more effective use of wage sources as applicable to all categories of workers.

The practice which is in effect for paying bonuses simultaneously from many sources leads to the diffusion of resources, a reduction in the effectiveness of the bonus, and duplication in paying bonuses for the very same individual.

Now the workers receive a large part of the bonus payments from the wage fund and only about three to four percent from the economic incentive fund, which appreciates this form of stimulation. On the contrary, the ITR and white collar workers receive virtually no bonuses from the wage fund. As regards the special sources for the payment of bonuses, they are not always used for the proper purpose and, thereby, do not support the interests of all the workers. A single fund for the payment of bonuses should be formed from profit and incentive bonuses for workers from the wage fund, all resources of the economic incentive fund (except for that part of it which is earmarked for other economic assistance), and resources for the payment of bonuses for the creation and introduction of new technology and the manufacture of consumer goods. Furthermore, a single fund for the payment of bonuses can include a portion of the planned increase in the wage fund which is directed toward stimulating the labor of the time-rate workers, ITR, and white collar workers. The creation of such a fund for the payment of bonuses will permit the conduct of purposeful regulation of wages of all worker categories.

Attention is also merited by the question of planning the wage fund as the basis for increasing its stimulating role.

Existing procedures for planning the wage fund establish the following directions for its formation: by the method of direct calculation in accordance with the labor intensity of the production program and in accordance with the monthly schedule for time-rate workers, ITR, and white collar workers; proceeding from the planned number of workers, the level of their average wage, and planned rates of growth in labor productivity; and in accordance with the wage expenditure allowances per unit volume of product produced.

The universal employment of the wage fund allowance introduced in accordance with the decree of the CPSU Central Committee and the Council of Ministers (CCP) on improving the economic mechanism strengthens the dependence of the wage resources obtained on the results of the enterprise's production-economic activity in comparison with the first two methods and stimulates the collective for the use of production reserves of every kind and for work with a smaller number of personnel as well as for ensuring an outstripping growth in the productivity of labor in comparison with a growth in wages. In addition, long-term stable allowances create the collective's confidence that the attained savings in the wage fund may be used to stimulate the workers and does not affect the size of the fund in the next planning period. The effectiveness of this method was confirmed by the experience of the Ministry of Instrument Making, Automation Equipment, and Control Systems where, beginning in 1971, the wage fund is planned in accordance with approved allowances

Gosplan USSR, Goskomsind [State Committee for Labor and Social Problems] USSR, Minfin [Ministry of Finance] USSR, and the TsSU [Central Statistical Administration] USSR approved on 12 October 1972 Methodological Instructions on the Procedure for Determining Long-Term Wage Allowances per Ruble of Production. However, the development of new procedures for determining the allowances themselves which orient the enterprise on the structuring of an efficient system for the organization of norm setting and wages is required.

in the development of these instructions. In fact, the level of intensity of the norms which has actually been attained, the grouping of work and workers according to wage rates which has developed, and existing forms of wages and the stimulation of labor have been taken as the basis in existing procedures in planning wages. Thus, in the procedure in effect for the working out of the personnel, industrial, and financial plan of a production association (combine) or enterprise which was worked out by the scientific research institute for planning and norms with Gosplan USSR jointly with the corresponding departments of Gosplan, the formation of the wage fund is based on the rates of growth of labor productivity and the average wage. The enterprises, in performing calculations of the planned wage fund, take as their basis the labor intensity and manning schedule of time-rate workers, ITR, and white collar workers.

Thus, in the majority of cases the planning level of the average wage for the enterprise as a whole is determined on the basis of the actual (reporting) wage level and the planned rates of growth in labor productivity. As a result, shortcomings in the norm setting of labor and the expenditure of wages, the use of worker time, the grouping of work and workers according to wage scales, and so forth are legalized. And often, those enterprises in which these shortcomings are inherent find themselves in a better situation in regard to the amount of wages. Planning "from what has been attained" consolidates errors in the organization of wages, adding them from year to year, and deepens differences in the level and relationships of wages.

Thus, at 25 related enterprises of the VPO "Soyuztorgmast" [expansions unknown] Minlegpromast, average wage fluctuates within a range of from 145 to 200 rubles. Here, the indicated enterprises are found under approximately equal organizational-technical conditions and have primarily the same complexity of production and work as well as close rates of growth in labor productivity. It is completely obvious that the wage level at the enterprises was formed not only under the influence of objective, but also subjective factors (shortcomings in the organization of labor and production, wage norm setting, and so forth).

In just what ways should the wage fund have been planned for the enterprises? Some economists believe that with the established wage allowance it would be sufficient to establish the well-grounded dependence of the increase in wages on the growth in labor productivity. This condition cannot be sufficient.

Let us examine a specific example.

With the mean wage level which has been formed at one enterprise of 100 rubles, and at another of 120 rubles and with the same rates of planned increase in per worker output--10 percent, a planned growth in the mean wage of 1 percent is specified for the enterprises.

In this case, the absolute increase in earnings at the enterprises will be:

at the first: $125(1 + \frac{3}{100}) - 125 = 3$ rubles 75 kopecks;

at the second: $150(1 + \frac{3}{100}) - 150 = 4$ rubles 75 kopecks.

The absolute increase in average earnings is higher at the enterprise with the higher wage level which was formed under the influence primarily of subjective factors.

As a result, the gap in wages increases to an even greater degree and the shortcomings in the organization of wages which are present will be consolidated.

It is necessary to accomplish the planning of the wage fund by enterprises on the basis of determining the normative planning level for wages and its comparison with what has actually been attained. The following should receive attention in calculations of the planning level: the status of labor norm setting, the stimulation systems employed and the relative share of the bonuses, the complexity of the products being produced and the qualifications of the personnel, working and production conditions, that is, all those indices which exert an influence on the wage level (mean level of norm revision--planned and actual, mean category of work and grade of workers and their conformance to the complexity of the products being produced, relative share of additional payments for nonproductive losses, level of defective output and overtime work, additional payments for deviation from normal working conditions, rates of increase in production, and so forth).

In summing up what has been said, it can be concluded that in working out a new procedure for determining long-term planning wage allowances, one cannot take as the initial value in all cases the base allowance which has actually been formed, but its size should be adjusted depending on all indices in the organization of norm setting and wages. At those enterprises where an unjustifiably high wage level has been formed, this level should be preserved or its insignificant increase should be envisaged.

Ensuring a stable wage level with an increase in labor productivity should be attained by eliminating shortcomings in norm setting and the stimulation of labor and unproductive losses, by the introduction of effective wage forms and systems, and so forth.

Inquestionably, the well-founded planning of wage funds will further the disclosure of production reserves, the economic use of the most important wage source, the maintenance of relationships in wages established by the state, and an improvement in the organization of wages at the enterprises.

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EDUCATION

MESHKOV ON VUZ-INDUSTRY R&D COOPERATION IN BELORUSSIA

Minsk PROMYSHLENNOST' BELORUSSII in Russian No 4, 1980 pp 42-45

[Article by N. Meshkov, minister of higher and secondary specialized education of the Belorussian SSR: "Problems of Scientific-Technical Progress: VUZ Science Is Production"]

[Text] Science ever increasingly is becoming a productive force of society and a powerful means for achieving the goals of the Soviet people. VUZ science in our republic also makes a definite contribution to scientific-technical progress. First of all, it supplies qualified specialists to all levels of the "research-development-production" process; it implants in its brood the ability to find original technical solutions, to cope with the ever-growing flow of scientific-technical information, to assimilate quickly what is new, and to manage people skillfully. Today, VUZ's of the republic basically satisfy the needs of the republic for specialists in all developing areas of science and engineering.

VUZ science has everything necessary to solve scientific and practical tasks. In the VUZ system of the Ministry of Higher and Secondary Specialized Education alone there are over 10 thousand scientific-pedagogical workers, including 200 doctors and 3250 candidates of science, and over 1590 postgraduates are studying. Furthermore, many thousands of students are participating in scientific investigations. The higher-school system has two scientific-research departments, three scientific-research institutes, the same number of special-design-technology bureaus with experimental shops, 12 problem laboratories, 28 scientific-research laboratories for branches of the economy, a computer center, and other scientific units. VUZ's are supplied with modern scientific and shop equipment costing over 60 million rubles.

The output is also great, especially in physics, chemistry, chemical technology, electronics, machine building and metallurgy, and construction. The number of scientific publications, monographs, and inventions is increasing year by year. The economic effect from the realization of VUZ developments just from 1976 to 1979 equalled over 150 million rubles.

We look upon all these achievements, however, only as a beginning of a large and complex job: above all, to solve one of the chief tasks of scientific-technical progress--the rapid and large-scale realization of new scientific ideas and engineering developments in industry and other branches of the economy.

Practice demonstrates that with the accumulation of scientific-technical potential there is a sharp increase in the loss from delay in realizing progressive solutions. That is why the scientists of higher schools search for and cultivate various forms of relations between VUZ science and not only individual and often large enterprises but also with whole branches of the economy.

One of the common forms of relations with branches of the economy has been economic agreements for the fulfillment of applied scientific-technical and experimental-design work on orders from enterprises and organizations. Each year, the quantity of research done by VUZ scientists on this basis is growing; its importance and timeliness are increasing. Usually, before concluding an economic agreement, there is a preliminary technical-economic substantiation with an obligatory calculation of the proposed economic effect. Patent-information research is conducted of all work completed under economic agreements. As a result, 48.8 percent of the work is considered major. In the Belorussian State University, the Belorussian Polytechnical Institute, the Minsk Institute of Radio Engineering, and the Vitebsk Technological Institute of Light Industry, the proportion of major work is more than 50 percent of the total.

A significant portion of the applied research projects (40 percent of the 369 economic agreements fulfilled in 1978) were introduced into the economy immediately after their completion. The remaining projects were included in plans for experimental production trials and innovations of production associations, factories, enterprises, and organizations for futures. Altogether, in 1979, republic VUZ's introduced more than 400 developments into production, permitting the economy to achieve an economic effect of more than 53 million rubles.

The development and strengthening of relations between higher schools and production makes possible the creation of scientific-research laboratories in higher educational institutions that are oriented toward branches of the economy. These units help to solve quickly the problems that arise in industry and significantly shorten the period of time from the end of a development to its introduction into production. At the present time 28 VUZ laboratories for branches of the economy fulfill 10 percent of the scientific research done under economic agreements.

The creation of laboratories with the aim of fulfilling large long-range projects continues. In 1978-79 alone the following scientific-research laboratories for branches of the economy were organized: electronic

means and methods for developing optical information, physical methods and means for diagnostic control of power plants (Belorussian State University); electromagnetic fault detection, modified concretes, operational optimization and complex automation of thermal electric stations, artificial automobile-road construction (Belorussian Polytechnical Institute), technology for creating microheterogeneous structures for electrophysical radiation methods (Minsk Radio Engineering Institute), and others. The organization of laboratories and sections directly at enterprises and associations was provided for by the decree of the CPSU Central Committee and USSR Council of Ministers, "On Raising the Effectiveness of Scientific Research Work in Higher Educational Institutions." Work toward the creation of such laboratories and affiliates is already extensive. The Novopolotsk Polytechnical Institute, the Mogilev Institute of Machine Building, and other VUZ's are participating in this work along-side production collectives.

A new form of creative relations between VUZ's and production has undergone significant development in the higher school system of the republic: the educational-scientific-production association established outside the governmental framework (UNPO). The first of their kind, created in 1974--the Belorussian Polytechnical Institute together with the Minsk Tractor Plant (UNPO "BPI-MTZ") and the Minsk Automobile Plant (UNPO "BPI-MAZ")--confirmed their high effectiveness. Their experience was widely confirmed by other VUZ's of the republic. Specifically, the following UNPO's were created: the Minsk Institute of Radio Engineering jointly with the "Integral" production-technical association, the Scientific-research Institute of Computers, and the computer factory imeni G. K. Ordzhonikidze; the Belorussian State University jointly with the "Integral" production-technical association, the Mogilev Institute of Machine Building, and the Mogilev automobile and elevator factories; the Vitebsk Technological Institute of Light Industry jointly with the Vitebsk carpet factory; the Belorussian Institute of the Economy jointly with agricultural enterprises of Logoyskiy Rayon and the state bearing factory No. 11; the Belorussian Technological Institute imeni S. M. Kirov jointly with the Belorussian Ministry of Forestry, the Belorussian wood-builders enterprise, the Belorussian Ministry of the Lumber Industry, the Gomel' chemical plant imeni the 50th Year of the Belorussian SSR, the Belorussian tire combine, the "Minsk Furniture Project" association, and enterprises of the USSR Main Administration for the Microbiological Industry that are located within the Belorussian SSR. With a number of others, there are 24 UNPO's in all.

In 1978 alone, participation in UNPO's involved 109 structural units (scientific-research institutes, problem scientific-technical laboratories, experimental scientific-technical laboratories, special design-bureaus, faculties, departments, and sections), 8 VUZ's (Belorussian Polytechnical Institute, Belorussian State University, Gomel' State University, Belorussian Technological Institute, Belorussian State Institute of the

Economy, Mogilev Institute of Machine Building, and the Vitebsk Technological Institute of Light Industry), and 1021 scientific-educational associates. The more qualified engineering-technical workers of 124 production associations, factories, ministerial scientific-research institutes and special design bureaus, and other services, directed the work of almost 4 thousand students who participated directly in the UNPO's. More than 5.6 thousand students became acquainted with the organization of production at enterprises, and 867 practical course and diploma assignments and projects in 51 specialties were fulfilled. Three VUZ departments were created at factories and production associations. Eighty-four projects worth 1.8 million rubles were fulfilled under economic agreements. More than 10 million rubles of economic effect was achieved from 1976 to 1979 from the introduction of VUZ developments into production. The effect for developments within the UNPO framework was 1.93 rubles for 1 ruble of expenditure, which was higher than the average indicator for the ministry (1.55 rubles). Fifty-eight scientific-research projects were fulfilled by scientists in UNPO's without compensation. Eleven hundred and fifty-three students participated in scientific research according to UNPO plans. Sixty-one joint invention claims were submitted by VUZ's and enterprises, and more than 20 positive decisions were made for the issuance of authors' certificates.

At the present time, preparatory work is being done for the creation of new UNPO's: "The Fauna of Poles'ya" with participation by Gomel' State University, the Brest Pedagogical Institute, and Belorussian preserves; the Novopolotsk Polytechnical Institute and the Novopolotsk petroleum refining plant, and the Brest Institute of Engineering and Construction with leading construction organizations.

It is necessary to note also that some UNPO's have definite shortcomings. For example, the work of associations does not everywhere come to grips with the basic aspects of the activity--the educational process, scientific research, and the organization of exploitational developments. Individual UNPO's work without long-range plans and carry out many uncoordinated projects. Let us the managers of both VUZ's and enterprises turn our attention to this.

Agreements for Scientific-technical Cooperation (DNTS) have achieved broad distribution in the republic. In 1978 VUZ efforts fulfilled more than 800 such agreements (28 percent more than in the preceding year), of which 205 were completed and 313 newly arranged with enterprises and organizations. The Belorussian Polytechnical Institute has the largest number of DNTS's--262, of which 69 were finished in the past year and 122 were newly arranged.

Examples such as the following illustrate the effectiveness of this form of creative cooperation. The utilization of developments accomplished by the Belorussian State University on the basis of DNTS's gave the economy

an economic effect of over 1214 thousand rubles, which exceeds the indicators for the previous year by a considerable amount. Students took active part in the solution of a number of production problems in accord with a complex DNTS concluded for the Tenth Five-year Plan between BGTKhI [expansion unknown] and the Minsk scientific-production association for furniture. Components and elements made from powdered materials were introduced into production by the Scientific-research Institute of Powder Metallurgy of the Belorussian Polytechnical Institute at the Polotsk fiberglass plant, the Minsk "Gormolzavod," the "Tulachermet" scientific-production association, and other enterprises. The economic effect of their introduction into production was 589 thousand rubles.

Practice convinces us that the more effective form of relations between science and production are the scientific-production associations which allow sharp (by a factor of 1/2 or 1/3) decreases in the length of time for introducing innovations into production. So, it seems correct and timely that a scientific-production association for powder metallurgy and protective coverings has been organized on the basis of the Scientific-research Institute for Powder Metallurgy of the Belorussian Polytechnical Institute and a powder metallurgy factory that is being created. It is supposed that the creation of an association will shorten considerably the length of time needed for introducing the results of scientific research, will conserve a large quantity of ferrous and nonferrous metals and alloys, and will lower the amount of labor required for preparing powdered articles.

Each year the quantity of work introduced into production by VUZ's in the ministry on the basis of the typical agreement is increasing. This refers to transferring scientific-technical achievements to other enterprises and organizations and offering them assistance in utilizing assimilated experience. Thus, the problem laboratory of complex utilization of lumber of the Belorussian Technological Institute introduced in the "Vil'ryusstroydetal'" the technology for pressing honeycombed slabs of increased thickness, which permits increasing the volume of production, lowering the cost of products, and achieving 459.4 thousand rubles in economic effect.

In accord with the decree of the Belorussian Communist Party Central Committee and the Belorussian SSR Council of Ministers, "On Measures for Further Improvement in Planning Scientific-research Work and Hastening the Introduction of Its Results into Production," scientific and other institutions of the republic are realizing a new approach to the organization of scientific research and transfer of its results to the economy. Whereas earlier, for example, the planning of research as a rule was accomplished by the researcher himself, leading to insufficient consideration for the needs of production, now ministries and agencies submit commission-orders to Belorussian SSR Gosplan which list research topics,

provide the technical-economic basis for the advisability of their development, and designate the desired performer. The most urgent commission-orders are becoming the plan topical. They are guaranteed financing and supplies and equipment. The republic Gosplan is granted the right to include long-range topics and scientific-research trends and to curtail emergent work in the State Plan for Economic and Social Development of the Belorussian SSR.

Today, more than 30 percent of the funds allocated for scientific research by the Plan for the Economic and Social Development of the Belorussian SSR are for the fulfillment of the scientific-technical programs of higher educational institutions of the Belorussian Ministry of Higher and Secondary Specialized Education. VUZ's of the ministry are fulfilling 50 tasks determined by the economic plan of the Belorussian SSR, participating in the development of 12 scientific-technical programs for the solution of the most important problems of the republic and of the branches of the economy, and 15 tasks for republic programs for the introduction of new technology, which are oriented toward the achievement of important economic goals.

For example, the Scientific-research Institute of Powder Metallurgy of the Belorussian Polytechnical Institute is fulfilling a program for the introduction at industrial enterprises of the republic, of new types of articles and components made by means of powder metallurgy methods. This work is proceeding successfully. A heat-treated tool for impact extrusion of articles from nonferrous metals was introduced at the Minsk production association imeni V. I. Lenin and the production association "Gorizont"; heat-treated friction materials for centers of friction in road machines are being applied at the Mogilev auto factory and the Minsk "Udarnik" factory; heat-treated filter materials for filtration of melted spinning material and control of suspension quality, at the Mogilev production association "Khimvolokno" imeni V. I. Lenin; filter elements of titanium powder for sewage treatment, at the Novopolotsk petroleum refining plant; heat-treated metallic forms, at the Minsk porcelain factory. Articles made of new materials have been introduced at "Belpromenergo," the Minsk motor factory, the "Gomel'mash" plant, and at other enterprises. In all, 17 developments from the Scientific-research Institute of Powder Metallurgy have been introduced into production at enterprises of the republic in just the past year. Their utilization provides a saving of over 4.5 million rubles a year.

Every year, the ministry, together with higher educational institutions, forwards proposals to the Belorussian Gosplan and the economic ministries and agencies of the republic for the organization of experimental-production tests and for utilization of the results of completed scientific-research work appropriate for one or more branches of the economy. After the review of these materials at sessions of scientific-technical councils for branches of the economy, with participation by scientists, measures

are determined for the utilization of the proposed developments and corresponding tasks are put into the plan for scientific-research work and for introduction of new technology. Proposals for the utilization of scientific-research work are sent to Belorussian Gosplan for inclusion in the State Plan for the Economic and Social Development of the Belorussian SSR.

In 1979 alone, the Belorussian Ministry of Higher and Secondary Specialized Education sent 29 proposals for review by 75 interested ministries, agencies, and enterprises of branches of the economy and of union significance; 18 of these proposals became obligatory for both the VUZ's responsible for their fulfillment and for the enterprises.

Many of the developments of VUZ's adopted for series production have important economic significance. Thus, scientists of the Belorussian Technological Institute imeni S. M. Kirov, together with the Novopolotak division of the "Plastpolimir" scientific-production association, created and introduced a self-extinguishing polyolefin composition into production at the Novopolotak "Polimir" production association and the Gur'yevskiy chemical plant. At the Belorussian University imeni V. I. Lenin, projects are in progress on improving and creating new measuring devices and apparatuses. A new receiving-recording system developed here is being utilized in the production of the atomic absorption spectrophotometer SA-9, which is distinguished for its high rate of productivity, for high precision in measurement, and for its increased simplicity and numerical display which, together with a high degree of automation of the measurement process, make it very easy to use.

In the microelectronics department of the Minsk Institute of Radio Engineering, research and development has been completed on a low-temperature electrolytic process for making integrated circuits. As a result, technological processes were developed and introduced at the "Integral" production association that permitted the solution of a number of urgent problems in raising the level of integration in large-scale integrated circuits, in particular, the forming of elements measuring under two micromicrons. For this work, the authors' collective (of which the scientific director was doctor of engineering sciences V. A. Labunov) was awarded last year a first prize of the Presidium of the USSR Academy of Sciences "For the Best Work in the Field of Electronics."

New tires for the guiding wheels for tractors of the "Belarus" family were created and introduced into production by the industrial scientific-research laboratory for general-purpose cultivator wheeled tractors of the Belorussian Polytechnical Institute (scientific director was doctor of technical sciences V. V. Gus'kov) jointly with the Minsk tractor plant, the Dnepropetrovsk branch of the Scientific Research Institute of the Tire Industry, and other organizations. The total real economic effect from utilizing the new tires on series tractors was over 30 million rubles.

it must be stated that far from all industrial enterprises and economic ministries show enlightened interest in VUZ innovations, even when these innovations have been proven in other enterprises. Thus, for example, the Minsk automobile factory delayed introduction of explosive-hardened components for mechanical forge presses, the hardening technology for which was developed by the Scientific-research Institute for Powder Metallurgy of the Belorussian Polytechnical Institute. And these components have more durability by a factor of 5 to 6 than the series type; evidence for this is the experience of the Minsk tractor factory and the Minsk gear factory.

And this is not an isolated case. Many instances are explained by the fact that a number of VUZ developments that could be introduced successfully are not included in plans for new technology either by branches of the economy or by enterprises. Also insufficient are measures for the material and psychological encouragement for innovation. Therefore, it would be advisable to develop a system whereby the questions of experimental-industrial trials and the introduction of the results would be decided already at the stage when applied scientific research is planned and the tasks would be included in plans for new technology for enterprises.

It seems that, in republic plans for introducing the results of completed scientific research work and also in programs in work for introducing new types of products, it is necessary to affirm the responsibilities of those ministries and agencies, enterprises, and organizations that will use the developments. Such an approach will increase the responsibility both of the developer and of the user for the fate of innovations and will hasten their introduction into the economy.

Fulfilling the decisions of the party and government and the instructions of the General Secretary of the CPSU Central Committee and Chairman of the Presidium of the USSR Supreme Soviet Comrade L. I. Brezhnev on questions of scientific development and strengthening its influence on all aspects of life in Soviet society, higher schools of the republic in recent years have definitely done much for the improvement of planning and coordination of scientific-research and experimental-design work, for the development of material resources, and for the strengthening of cooperation between science and production. However, as was noted at the 19th plenum of the Belorussian Communist Party Central Committee by candidate member of the Politburo of the CPSU Central Committee and first secretary of the Central Committee of the Belorussian Communist Party Comrade P. M. Masherev, it is assumed to be only the beginning of a large-scale, complicated job, tied with the increasing contribution of the republic in the solution of problems of historic importance presented by the party--the uniting of the achievements of the scientific-technical revolution with the advantages of socialism.

This instruction greatly obligates the scientists, the post-graduate students, and the undergraduates of our VUZ's: organizing scientific activity more efficiently and searching harder for ways to have more effective influence on the development of the economy and to improve the management mechanism--these are everyday concerns. They are a matter of honor.

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EDUCATION

AGRICULTURAL INSTITUTE OPENS NEW BRANCH TO MEET SHORTAGE OF SPECIALISTS

Ashkhabad TURKMENSKAYA ISKRA in Russian 21 Aug 80 p 3

[Interview by L. Shiyapnikova with A. K. Rustamov, rector of TSKhI, entitled "There is a New VUZ in Prospect"]

[Text] The new academic year is a remarkable one for the Turkmen Agricultural Institute (TSKhI) imeni M. I. Kalinin first of all because it is marking its 50th anniversary. But in addition to this, on 1 September two departments of the oldest VUZ in the republic will begin instructing students in a number of specialties not only in Ashkhabad but in Tashauz as well. The conversation of our correspondent L. Shiyapnikova with A. K. Rustamov, rector of TSKhI, is devoted to this event.

[Question] Anver Keyushevich, please tell us in which specialties will training be conducted in Tashauz.

[Answer] For the time being we are accepting students this year in Ashkhabad for classroom instruction only, in five specialties. The department of agronomy will train specialists in agronomy—fruit and vegetable growing, viticulture, and agriculture as well—which is the conventional title for the specialty whose graduates become engineers, and instructors at the agricultural vocational-technical schools (PTU). The hydromelioration department offers two specialties—hydromelioration and mechanization of hydromelioration work. I would like to stress that our VUZ will train engineer-instructors for rural PTU's and specialists on mechanization of hydromelioration work in Tashauz only.

[Question] And are there many who would rather study in the oblast center than in the capital?

[Answer] I must say that no less than three or four persons have to compete for each seat in the specialties announced. Reception is still going on, but even now one can already foresee that about half of those who have signed up will hold scholarships from a kolkhoz. The specialty "mechanization of

hydromelioration work" has been placed in the highly critical category by the decree of the CPSU Central Committee and USSR Council of Ministers, "On the Further Development of the University and Increasing the Quality of Training of Specialists." In connection with this, those who graduate from secondary general-educational schools with a gold medal, or distinguished graduates from secondary special and vocational-technical educational institutions, are registered for the given speciality without an entry examination. Thus: Kamil-Dahan Avezov, Mayadshan Gokova, Kerimbay Dzhepharov, Atadurdy Dahanagel'dyyev, Nurkhan, Sandylyayev and Begenchgaldi Yazlyyev have by now received their congratulations. And the other day two more fellows were registered for this speciality on the results of two exams on related disciplines. You see, we have the right to accept on this basis those whose grade books show an average of not less than 4.5. In all we have to accept 200 persons in the departments at Tashauz.

[Question] There is very little time until the beginning of the new academic year. Is everything ready for the normal organization of studies in Tashauz?

[Answer] The party and soviet organs of the republic and the Tashauzskaya Oblast have given the most effective assistance during the establishment of our new subdivision. We've gotten a new academic building complex, two dormitories, and living quarters for the professorial-instructor staff. The academic building complex is situated in the region which will become the center of Tashauz. During the 11th Five Year Plan, other new complexes will be constructed next to this building complex.

Right now 24 out of our 39 departments are occupied with the organization of study rooms and laboratories, and with supporting the normal course of the academic process for the first year students as well. In the course of the academic year we estimate that all this will be arranged no worse than it is in Ashkhabad. Our institute's library, whose facilities consist of more than a quarter-million volumes, will send a significant part of these to Tashauz. And the professorial-instructor staff, the nucleus of which comprises the workers of the institution, is being organized successfully. Our leading scholars will regularly travel to Tashauz to deliver lectures.

In training the agricultural specialists in Tashauz, we are counting on the assistance of the foremost kolkhozes in the oblast, the experimental station of the Agricultural Scientific Research Institute of the USSR Ministry of Agriculture, and the agricultural technical school.

[Question] And in conclusion, I would like to ask what seems to me the most important question: What made it necessary to open these departments in Tashauz?

[Answer] The northeastern part of Turkmeniya is even now one of the primary cotton-producing regions of the republic. Prospects for its socio-economic development are truly enormous. Great land resources will be developed in connection with the construction of the Tyuya-Muyun canal. In order to carry

on the irrigation work and develop the new lands many specialists will be required. And our institute in Tashkent will train them. And the engineer-instructors of the ITU, our graduates, will apply their efforts to supply these sectors with qualified workers.

The peculiarities of introducing agriculture to the zone of the Tyuya-Muyun canal requires research; it goes without saying that agriculture here will differ significantly from that in the zone of the Karakum canal.

There are other plans as well. Irrigation requires a great deal of work in land management. Specialists of the highest group in this area are not being trained in the republic. Although at this very time there is great need for them, special-purpose programs in Voronezh and Tashkent train only 25 each, annually. It is entirely possible that in the future the Tashkent hydrometeorological department will be changed over to land management, inasmuch as there is much in common in the academic plans of these two specialties. In addition, the republic needs specialists on protecting plant growth, agronomist-soil experts and agrochemists, which we are not yet training. The department of agronomy can become the basis for this training; and in the future, I believe, the basis for yet another VUZ in the republic.

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EDUCATION

HIGHER EDUCATION EXPANDS FACILITIES TO MEET NEED FOR SKILLED SPECIALISTS

Ashkhabad TURKMENSKAYA ISKRA in Russian 30 Aug 80 p 3

[Article by S. Muradov, minister of Higher and Secondary Special Education, TSSR, "Increase the Contribution of the University"]

[Text] Our country is getting ready for the 26th CPSU Congress. The primary attention of the working collectives is now concentrated on successful completion of the tasks of the decisive year of the 10th Five Year Plan. "In the past years we have accumulated valuable experience in building communism. We must adopt a careful approach to everything that is positive in our work," said L. I. Brezhnev in his report to the June (1980) Plenum of the CPSU Central Committee. Preparing to greet the coming party forum in a suitable manner, the VUZ's of the republic are analyzing their activities from these very positions.

The higher educational institutions of Turkmenistan are making a weighty contribution to the training of highly skilled cadres. In each year of the five-year plan the republic received on the average about 5,500 specialists. At the present time for every thousand people working in the republic there are 79 with degrees in higher education. Thirty-three thousand students—representatives of 40 nationalities—are currently studying in seven VUZ's of the republic. In this academic year 7,850 people will enter the auditoria of the VUZ's for the first time, which is about 800 more than there were in the first year of the 10th Five Year Plan. In addition, 920 young people will become students in the preparatory department, 507 will be coming to study in the central VUZ's, and 104 young men and women of the indigenous population will be added to the rolls of the preparatory departments of these VUZ's.

Great changes have come to pass in the system of higher education itself in the republic. Let's begin with the fact, that the TSSR Ministry of Higher and Secondary Special Education was itself formed only a year and a half ago. Undoubtedly it will play a positive role in improving, in particular, the educational-methodological work in the VUZ's. In January of this year, the Turkmenistan Institute of Agriculture was opened on the facilities of the department of economics of the university. This summer it held its first independent admissions for first-year students, during

which five of the eight specialties which may be acquired here were offered for the first time. On September 1, the engineering and technical department of the Turkmenistan Polytechnical Institute in Mary will begin to function, and the Turkmenistan Agricultural Institute will commence training specialists in a number of specialties in Tashauz. These subdivisions, along with the already-existing VUZ's of the republic and the departments of the Moscow Institute of the Petrochemical and Gas Industry imeni I. M. Gubkin (which holds evening classes in Nebit-Dag and classes in general technical subjects in Krasnovodsk) have made it possible to receive a higher education in every oblast.

During the 10th Five Year Plan, admission to the pediatrics department of the Turkmenistan Medical Institute was increased by 200 persons. The Turkmenistan Pedagogical Institute of the Arts graduated its first students, and this year had yet another innovation—the departments of the arts and cultural educational work are currently accepting not only day students but also correspondence course students. The Turkmenistan Pedagogical Institute imeni V. I. Lenin in Chardzhou is preparing to train instructors in basic military training and physical education. The Agricultural Institute has begun to train engineer-instructors for the rural vocational training schools. Thus, 78 specialties are now offered in seven VUZ's in the republic. The Ministry of Higher and Secondary Special Education, Gosplan, and other interested organizations in the Turkmen SSP are presently studying the need for and the possibility of opening new specialties and new VUZ's in order that the needs of the economy of the republic for additional, well-rounded, skilled workers may be satisfied.

Considerable changes have taken place also in the system for admitting new students to the VUZ's. This year, for example, because of a severe shortage of cadres in the remote rural areas, the VUZ's of the republic were given permission to hold non-competitive admissions from among those who are ready to leave school and are permanent residents in these areas. In every VUZ there are specialties in which, as an experimental measure, young men and women are being accepted who have a average grade of 4.5, even in cases where they have been recruited on the basis of two exams whose results were not less than 9.0. And in the Agricultural Institute, for the specialty "Machine Operator for Hydromelioration Work," which is among the most critically short-handed fields, secondary school graduates with gold medals and honor graduates of secondary-special and vocational-technical educational institutions are being registered without examinations.

The document which has given impetus to the further perfection of higher education is the decree of the CPSU Central Committee and USSR Council of Ministers, "On the Further Development of the University and Increasing the Quality of the Training of Specialists," which was adopted a year ago. It contains a complex program directed toward improving the activities of the university: strengthening its role in socio-economic and scientific-technical progress; more fully supplying the economy with skilled cadres; turning the higher educational institutes into centers of education, communist upbringing, science and culture. At the past All-Union Conference

of University Officials held in February of this year, the topical questions of perfecting higher education which were brought forth in the decree were discussed. I shall dwell on several of them.

The decree envisages implementing measures on further development of the universities as leading educational-methodical and scientific centers of higher education. At the TGU Turkmenistan State University imeni M. Gor'kiy 10,000 students are being educated in 30 specialties. The primary part of fundamental VUZ research is conducted here. The graduate school of the university is training scientific-pedagogical cadres in general scientific disciplines and the social sciences to satisfy the needs of all of the VUZ's of the republic. The professorial-instructor staff is actively working on the creation of educational-methodical teaching materials, recommended works, and textbooks. Almost all inter-VUZ scientific-methodical councils are headed by research fellows of the university. Seminars and conferences are held on various aspects of the activities of the educational institute on this basis.

A considerable amount of work has been accomplished, but one would think that the university is capable of much more. One important task for the near future is the transformation of the TGU imeni M. Gor'kiy into a center of scientific-theoretical thought and progressive methodical ideas. The university itself has been called upon to determine the principal directions of development of the fundamental sciences in higher education.

In terms of vocational training, it is indisputable that strengthening the material-technical base of the educational institutions is of great influence. In the educational institutions of the system of Minvuz, TSSR alone, during the 10th Five Year Plan an educational laboratory and scientific equipment, technical facilities, computers, equipment for linguaphone study rooms and laboratories, projection equipment and the like worth 950,000 rubles have been acquired. All of this must be used in the educational-methodical and scientific research work.

This year, a computer center has been established at the facilities of the university for the higher educational institutions. The university, the pedagogical institute of the arts, the Institute of Economics had an opportunity to become convinced of its usefulness during the admission of new students. They have tested the subsystem "Abiturient"; preparations are in progress for introducing the subsystem "Student Contingent" and "Session." In the future it is planned to expand the sphere of activities of electronic computers in the administration of VUZ processes.

Recently much has been done to improve the organization of scientific research work in the VUZ's. Significant strides have been taken in raising VUZ science to a higher level. Concerning this, for example, the following facts bear witness: The VUZ's of the system of the Ministry of Higher and Secondary Special Education of the TSSR completed 160 themes, the development of which occupied 700 instructors. The average value of economic contract work has increased by a factor of two. And now the VUZ's are faced with the tasks of expanding scientific research work on the basis of programmed special-purpose planning.

In concluding this conversation on methods of all-round improvement of the quality of vocational training and ideological-political education of the specialists, I would like to stress in conclusion that the characteristic feature of the Soviet system of higher education is the organic unity of the processes of upbringing and education. The new type specialist is not only one who is capable of actively mastering and confirming in practise all that is progressive in manufacturing, in science, technology and culture; he is also one who has mastered well the principles of Marxist-Leninist education, who sees clearly the political aims of the party and the country, profoundly grasps the habits of socio-political and organizational activities; who knows how to work with people; and who evaluates the achievements critically. Thus has our Communist Party taught us.

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DEMOGRAPHY

BOOK DISCUSSES POPULATION, DEMOGRAPHIC POLICY

Alma-Ata NARODNOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 6, Jun 80 pp 76-77

[Review by S. Sundetov, chief of Department of Economics of Labor and Labor Resources of NIEIPiN with Gosplan, Kazakh SSR, candidate of economic sciences of the book "Razvitiye narodonaseleniya i demograficheskaya politika" by M. Tatimov]

[Text] Nauka Publishing House of the Kazakh SSR has published a book by M. Tatimov entitled, "Razvitiye narodonaseleniya i demograficheskaya politika" [The Development of Population and Demographic Policy]. The author of the monograph analyzes the basic socio-philosophical aspects of a systems study of demographic development and thrusts to the foreground the problem of efficient use of labor resources and questions of elaborating an effective long-term demographic policy. In this regard, special attention is devoted to the specific problems of Kazakhstan.

The first chapter deals with the methodological bases for social control of population development. The author investigates the possibilities for purposeful influence on various forms of natural and mechanical population movement and confirms the necessity for social influence on the demographic situation.

Using Kazakhstan and the Central Asian republics as an example, the work proves convincingly that socialism possesses a tremendous advantage over capitalism in the solution of population problems. M. Tatimov subjects Malthusianism to convincing and well-founded criticism from Marxist positions and he proves the groundlessness of its reactionary conclusions.

The second chapter discloses the effectiveness of a socialist society's demographic policy as a tool for influencing population processes. Analyzing the demographic situation in light of this policy, the author finds the correct paths for the solution of a number of difficult methodological problems. He considers the population of the republics or economic rayons as a single demographic organism rather than a closed system.

In the third chapter, great attention is devoted to the historical process of population development in our country under the influence of the radical economic and socio-political changes.

The work expresses the thought of the possible further growth of the population as a whole throughout the country. According to the researcher's assumption, it will number approximately 300 million people by the year 2000.

Treatment of problems of the dynamics in numbers of the various nationalities living in the USSR and the growth in the city population by national composition which is examined in a rather broad plane--for 75 years--is of certain interest.

The reproduction regime's phased evolution is analyzed using Kazakhstan as an example, and the thought that in the contemporary demographic situation the republic has its own regional special features is substantiated.

The high rates in population growth up to the second half of the 1960's were caused, as the author correctly notes, by the wide-scale development of the region's natural resources.

Thousands of workers and specialists came to Kazakhstan from various regions of the country, and it became one of the most multinational union republics.

Thanks to the relatively low death rate and high birth rate, the natural population increase in the republic is three times greater than the average for the country. Nevertheless, the natural demographic base of Kazakhstan is still insufficient for its further rapid economic development. Therefore, the republic is interested in a higher natural increase in labor resources.

In evaluating the work's trend favorably, it should be noted that not all the questions which are touched upon in it are elaborated with the same depth and individual aspects of the subject did not receive sufficient treatment.

In the author's opinion, some mitigation of the shortage in labor resources is attained through the rational direction of the population's migration in the country (p 77). However, he does not point to the difficulties connected with the solution of this problem. A population surplus in some economic rayons is not directed so easily to other rayons to provide a labor force for the national economy. Problems in the rationalization of migration processes and the distribution and redistribution of worker personnel touch on a complex of economic, social, and moral factors, primarily problems in the optimum disposition of production.

Great interest is aroused among the book's readers by the definition of the basic principles for a single and regional population policy in a Soviet society, the correctness of which is subject to no doubt and question. However, there should have been a deeper disclosure of the debatable nature of the so-called "differentiated" policy. Despite the fact that the work is based on a

serious foundation of statistical analysis, more materials on the republics of Central Asia and Kazakhstan should have been drawn upon. There is a special requirement for a deeper analysis of demographic history and the status and prospects of our republic in this regard.

However, on the whole the book is a necessary and useful investigation. It is attracting the attention of scientific and planning personnel who are occupied with problems in the disposition and forecasting of labor resources.

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